Plasma miR-135a; a potential biomarker for diagnosis of new type 2 diabetes (T2DM)

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ABSTRACT

Background: MicroRNAs are a class of negative regulators of gene expression. Evidences indicate that miRNAs involved in the pathogenesis of New type 2 diabetes(NT2D) through decrease the expression of the genes secreting insulin and increase expression of insulin secretion suppressing ones, as well as exocytosis, incorporate in New type 2 diabetes . In this study, we evaluated the expression level of miR-135 in plasma sample of those prone to susceptible diabetes and New type 2 diabetes patients compared to the control group.

Methods: Subsequently to evaluation of biochemical parameters such as (TG, TC, HDL and LDL) in susceptible diabetes, New type 2 diabetes and control group, miR-135a level was measured by qRT-PCR in the plasma samples and results were analyzed by Stata and REST softwares.

Results: We identified a significant increase in miR-135a expression in New type 2 diabetes and susceptible diabetes samples compared to the control group. AUC in ROC curve analysis was 1.1 respectively (confidence interval of 1.0-1.0) for NT2D and susceptible diabetes group, the best cut-off points for diagnostics in diabetics and susceptible diabetes were 2.00 and 1.02. The optimum sensitivity and specificity for both groups was 100 and 100. Results confirmed the test for 100% confidence in healthy, susceptible diabetes and New type 2 diabetes subjects.

Conclusion: It seems that plasma level of miR-135a can be a desirable biomarker to differentiate T2DM diabetics from the control group.